

WHAT IS CLAIMED IS:

1. An apparatus for reducing radio frequency interference in a system that includes a radio receiver, the apparatus comprising:

a requantizer for outputting a requantized signal based on an input signal;

5 a first filter of a first order, said first filter for receiving said requantized signal and outputting a first filtered signal;

a second filter of a second order higher than the first order, said second filter for receiving said requantized signal and outputting a second filtered signal;

a selection means for selecting one of the first and second filters,

10 wherein when said radio receiver is not in use, said second filter is selected, and when said radio receiver is in use, said first filter is selected; and

an adder for adding the output of the selected filter to said input signal.

2. The apparatus of claim 1, wherein said apparatus is a variable-order noise shaper, wherein said noise shaper is of an order corresponding to an order of the selected filter.

15 3. The apparatus of claim 1, wherein said radio receiver is an amplitude modulation (AM) tuner.

4. A method for reducing radio frequency interference caused by harmonic frequencies, comprising the steps of: /

determining a tuned frequency of a radio signal;

20 providing a first sampling rate at which the radio signal is to be sampled, said first sampling rate associated with a plurality of first harmonic frequencies;

providing a second sampling rate at which the radio signal is to be sampled, said second sampling rate associated with a plurality of second harmonic frequencies different than the first harmonic frequencies;

selectively sampling the radio signal at one of the first and second sampling rates, wherein the first sampling rate is selected when the first harmonic frequencies do not coincide with the tuned frequency, and the second sampling rate is selected when the second harmonic frequencies do not coincide with the tuned frequency.

5           5.     A method for reducing radio frequency interference caused by harmonic frequencies in a system that includes an audio source, comprising the steps of:

oversampling an inputted signal having a first sampling frequency and outputting an oversampled signal;

10           selectively performing one of: 1) outputting the oversampled signal without changing the first sampling frequency when the audio source is not an AM tuner; or 2) resampling the oversampled signal by linear interpolation and outputting a signal having a second sampling frequency different than the first sampling frequency when the audio source is an AM tuner.